

Claims

1. Pull-out guide (10) for drawers and other furniture parts which can be pulled out of the carcass of a piece of furniture with a running rail (14) which can be fixed on the drawer or on the furniture part and a carcass rail (12) which can be fixed on the furniture carcass as well as - if appropriate - a central rail (16) which is provided between these two rails, the rails being guided so as to be longitudinally displaceable relative to one another by load-transmitting anti-friction bearings which are in each case retained rotatably in cages (22), characterised in that the anti-friction bearings are constructed in a manner which is known *per se* as cylindrical rollers (30; 34) which are retained in the associated cage (22) so as to be rotatable transversely with respect to the pull-out direction about a horizontal or vertical axis in each case, and which can roll on elongate planar tracks constructed on the respectively associated rails, and that at least some of the rollers (30) which are mounted so as to be rotatable about the horizontal axis are disposed in the respectively associated cage (22) so as to be offset with respect to one another laterally in the direction of their longitudinal central axes relative to other rollers (30) which are mounted in the same cage (22) so as to be rotatable about the horizontal axis and roll on the same tracks in each case.

2. Pull-out guide as claimed in Claim 1, characterised in that the cage or cages (22) is or are formed by an elongate plastic profile which in cross-section has substantially the shape of a U tilted by 90°, the receptacles for the rollers (30) which are rotatable about the horizontal axis being provided in the arms of the U (28) which are spaced from one another in the vertical direction, and that a profile arm (32) projecting at right angles in front of the open mouth of the U profile is attached to the free edge of one of the arms of the U (28) of the respective cage (22), the receptacles for the rollers (34) which are rotatable about the vertical axis are provided in the profile arm, and the profile arm retains these rollers (34) in the region of and spaced from the second arm of the U (28).

3. Pull-out guide as claimed in Claim 2, characterised in that in the space formed between the arms of the U (28) of the cage (22) a flat disc-like running roller (36) is disposed adjacent to the second arm of the U (28) so as to be rotatable about a vertical axis, the diameter of the roller being chosen to be approximately equal to the clear distance between

the vertical profile webs of the two rails (12, 16; 16, 14) which are mounted so as to be displaceable relative to one another by the rollers of the respective cage.

4. Pull-out guide as claimed in Claim 2 or 3, characterised in that in a manner which is known *per se* stop dampers which come into abutment on an associated stop (24a; 24b; 26a; 26b) in each of the end positions of the pull-out path of the drawer are provided on at least one of the cages (22), and that the stop dampers are formed in each case by a respective part-region which is integrally attached to the profile arm (32) projecting in front of the open mouth of the U profile and is resiliently deformable by a predetermined amount relative to the profile arm (32) in the pull-out direction and/or the retraction direction.

5. Pull-out guide as claimed in one of Claims 2 to 4, characterised in that the running rail (14) is constructed in a manner which is known *per se* as an elongate hollow sheet metal section which is substantially rectangular or square in cross-section and which is provided only in the region of a corner with a longitudinally extending through slot for a vertical profile web (18) of the adjoining rail which is retained so as to be displaceable relative to the running rail (14), whereby a narrow elongate profile arm (20), which has formed on its upper and lower flat faces the tracks for the rollers (30) retained in the cage so as to be rotatable about the horizontal axis, is attached to the edge of the vertical profile web (18) inside the running rail, whilst the rollers (34) which are rotatable about the vertical axis or respectively the disc-like running roller (36) roll on opposing flat faces of the vertical profile web and the disc-like roller (36) additionally rolls on the inner face of the profile arm, which lies opposite the vertical profile web, of the metal profile which forms the running rail (14).

6. Pull-out guide as claimed in Claim 5, characterised in that the vertical profile web which engages in the interior of the running rail (14) is part of a channel-like sheet metal profile which forms the carcass rail (12), which can be fixed on the carcass wall, of a partial pull-out means.

7. Pull-out guide as claimed in Claim 5, characterised in that the vertical profile web (18) which engages in the interior of the running rail (14) is part of an elongate sheet metal profile which forms the central rail (14) of a full pull-out means and which in its part-region

lying outside the running rail (14) is constructed symmetrically with the part-region lying inside the running rail and engages with the part-region lying outside the running rail (14) in a part of the metal profile forming the carcass rail (12) and of complementary construction in cross-section to the running rail profile and is retained so as to be longitudinally displaceable.

8. Pull-out guide as claimed in one of Claims 2 to 4, characterised in that an elongate hollow section made from sheet metal which is of substantially rectangular or square cross-section is provided as the central rail (16') of a full pull-out means and is provided only in the region of one corner with a longitudinally extending through slot for a vertical profile web of the adjoining carcass rail (12') which is retained so as to be displaceable relative to the central rail, whereby a narrow elongate profile arm (20), which has formed on its upper and lower flat faces the tracks for the rollers (30) retained in the cage (22) so as to be rotatable about the horizontal axis, is attached to the edge of the vertical profile web inside the running rail, whilst the rollers (34) which are rotatable about the vertical axis or respectively the disc-like running roller roll on the opposing flat faces of the vertical profile web and the disc-like running roller (36) additionally rolls on the inner face of the profile arm, which lies opposite the vertical profile web, of the metal profile which forms the central rail (16'), and that on the outer flat faces of the vertical profile arms of the central rail (16') which are spaced from one another there are provided disc-shaped running rollers (50) which are mounted so as to be rotatable about a horizontally extending axis at right angles to the pull-out direction and of which the circumferential surfaces roll in each case on two associated horizontal tracks of the running rail (14) which are spaced from one another in the vertical direction.

9. Pull-out guide as claimed in Claim 8, characterised in that the running rail (14') is in the form of a substantially U-shaped profile which is tilted by 180° about the central longitudinal axis and which is provided in each case with narrow strip-shaped profile portions (52) directed at right angles to one another in the lower edge region of the profile arms which point downwards, so that the inner faces which point towards each other of the strip-shaped profile portions (52) on the one hand and of the opposing profile web (54) on the other hand form the tracks for the disc-shaped running rollers (50).